PSEUDOTAENIA WATERHOUSEI (V. d. POLL) (COLEOPTERA: BUPRESTIDAE) IN NEW SOUTH WALES

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Abstract

Earlier believed extinct in New South Wales, *Pseudotaenia waterhousei* is shown to be widespread and locally common in the interior of the State. The larval host in the southern part of the insect's range is *Acacia doratoxylon*. A summary of the recorded hosts of *Pseudotaenia* spp. is provided.

Introduction

Pseudotaenia Kerremans is one of nine genera of the buprestid subfamily Chalcophorinae currently recognized in the Australian fauna (Carter, 1929; Levey, 1978). Carter lists eight species of *Pseudotaenia*, limited in distribution to Queensland (five species) and Western Australia. They include the largest, and arguably some of the finest Australian species in the subfamily.

Unlike many other Australian Buprestidae, in particular members of the predominant genus *Stigmodera* and its allies, the Chalcophorinae are not known to feed on floral nectar as adults; rather, they frequent foliage, often of the larval hostplant. Recorded hosts of adult *Pseudotaenia* include tree species from several unrelated genera (Table 1). However, all known larval hosts are species of *Acacia* (Table 1).

No adult foodplant has been confirmed for *Ps. waterhousei* (V. d. Poll), and Hawkeswood (1983) suggested that adults may not feed at all. M. De Baar (cited by Hawkeswood, 1983) observed adults on lower trunks of the larval host *Acacia leiocalyx* at Dunmore State Forest in south-east Queensland. In central Queensland, Barnard (1890) described similar behaviour by the beetles on lancewood (*Acacia shirleyi*), suggesting that the latter species is the larval host there. Both *Acacia* spp. belong to the section Juliflorae (Pedley, 1978), and there are evident similarities in terms of habitat and growth habit between *A. leiocalyx* at Dunmore State Forest (Hawkeswood, 1983) and *A. shirleyi* further west and north (Groves, 1981). E. Adams of Edungalba, central Queensland (pers. comm., 1986) remembers hearing from H. Barnard that in January "from about 2 pm onwards [adults] come down the trunks of the trees on the shady side". Barnard "had taken as many as 50 . . . during one evening at 'Coomooboolaroo' near Duaringa". Adams considers that most were probably ovipositing females.

Occurrence of *Pseudotaenia waterhousei* in N.S.W.

Although Carter (1929) did not record the range of *Ps. waterhousei* as extending to N.S.W., Hawkeswood (1983) listed three "extremely old" specimens in the Australian National Insect Collection (ANIC) from Bimbi and Dubbo in the central west of the State. However, he considered the

species to have become extinct in N.S.W., citing the lack of recently collected specimens and the great changes that have occurred in the habitat since last century.

In fact, *Ps. waterhousei* continues to survive at discrete localities over a wide area of the western slopes of N.S.W. I have already noted several of these localities (Pullen, 1984); Fig. 1 shows places in N.S.W. where *Ps. waterhousei* is now either known or suspected to occur. The known localities are numbered as follows:–

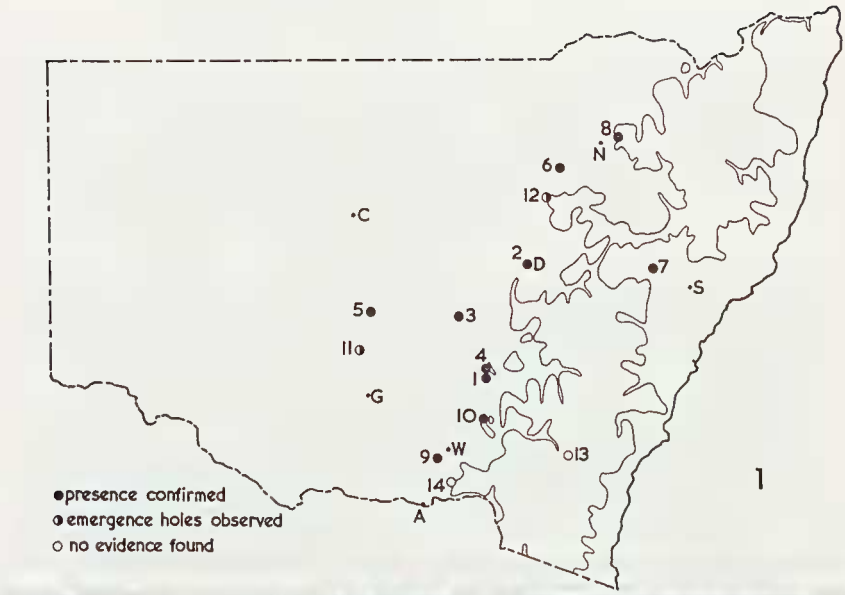
1. Bimbi: 1 in ANIC (Hawkeswood, 1983).
2. Dubbo: 2 in ANIC (Hawkeswood, 1983).
3. Black Range, 16 km SW of Trundle: 1 in Australian Museum, Sydney, coll. 8 Jan. 1964 by B. Lowery.
4. Western foot of Weddin Mountains, near Grenfell (Fig. 2): on 13 Dec. 1981 the author and R. Pullen found adults emerging from trunks of living *Acacia doratoxylon* A. Cunn. (Mimosaceae) at a site just inside the boundary of the Weddin Mountains National Park and only about 13 km N of Bimbi (Pullen, 1984). A. Sundholm (pers. comm., 1985) subsequently (25 Dec. 1983) obtained a log billet from a heavily infested tree at the same site; 1 adult ♀ emerged the next day.
5. Round Hill Nature Reserve: examination by the author of *A. doratoxylon* trees on an isolated rocky hill in Nov. 1983 revealed numerous characteristic emergence holes and remains of an adult beetle.
6. Approximately 20 km NE of Kennebri: on 8 Apr. 1985, A. Sundholm (pers. comm., 1985) and J. Bugeja exposed a dead adult and several presumed larvae when cutting open "an *Acacia* sp., possibly *leiocalyx*".
7. Sandy Hollow: on 24 Oct. 1985 the author found remains of 1 adult in a tunnel in a fallen *Acacia doratoxylon*; numerous emergence holes typical of *Ps. waterhousei* were observed in many other *A. doratoxylon* trees.
8. Mt. Kaputar National Park: G. Williams (pers. comm., 1985) in Nov. 1985 found "quite a few" dead adults in dead trunks of *Acacia ?leiocalyx*; "one trunk, of *ca.* 11 cm width, had collapsed exposing 4 [dead] adults".
9. The Rock: 1 dead adult was taken from a gallery in a dead *A. doratoxylon* by the author on 28 Dec. 1985; several very fresh emergence holes of characteristic appearance were observed in another *A. doratoxylon.*
10. Near Bethungra: 2 dead adults were present in a dead *A. doratoxylon* tree examined by the author on 28 Dec. 1985; old emergence holes (Fig. 3) were present in other trees, although not commonly.

In addition, the author has observed characteristic emergence holes in trunks of *A. doratoxylon* at the following two localities, although no actual beetles could be found.

11. Monia Gap, Lachlan Range (Nov. 1983).
12. Western slopes of Warrumbungle Range (Oct. 1985). Here similar emergence holes were observed also in *Acacia cheelii* Blakely. Confirmation of this species as a host of *Ps. waterhousei* awaits the finding of adults or identifiable larvae.

No evidence of *Ps. waterhousei* was found in stands of *A. doratoxylon* examined at the following two sites:

13. Molonglo Gorge, near Queanbeyan (Jul. 1985).
14. Cromer Hills, near Holbrook (Dec. 1985).



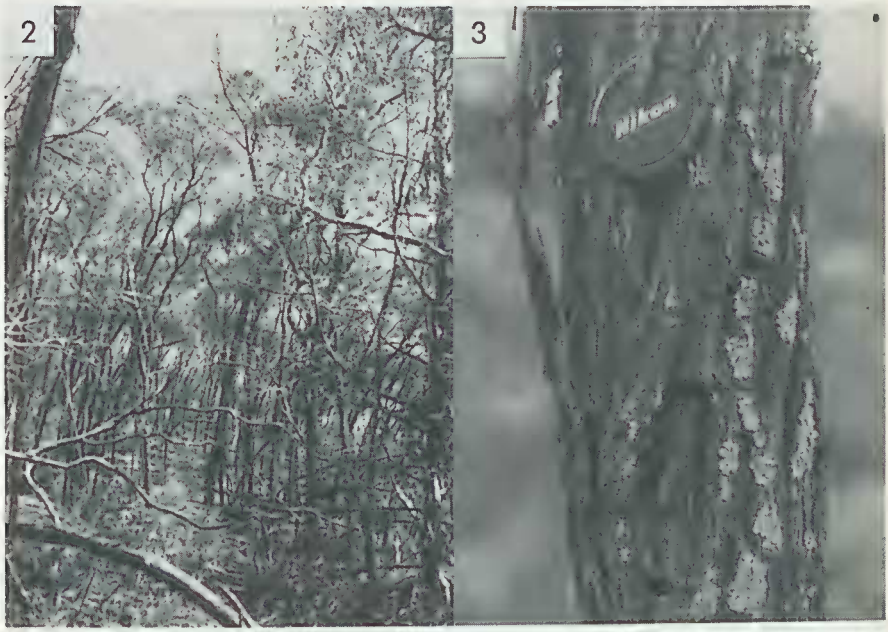


Fig. 1. Distribution of *Pseudotaenia waterhousei* in N.S.W. Great Dividing Range indicated by 500m contour. Towns shown: A, Albury; C, Cobar; D, Dubbo; G, Griffith; N, Narrabri; S, Singleton; W, Wagga Wagga. Refer to text for key to numbered localities.

Fig. 2. Stand of *Acacia doratoxylon* on western foot of Weddin Mountains.

Fig. 3. Presumed emergence holes of *Pseudotaenia waterhousei* in trunk of dead *Acacia doratoxylon.* Near Bethungra.

Discussion

Acacia doratoxylon, or "currawang", is widely distributed on the western slopes and plains of N.S.W., extending into north-eastern Victoria (Maslin & Pedley, 1982). The alternative common name of lancewood reappears among several given by Cunningham *et al.* (1981), and the species often forms dense, almost monospecific communities clearly similar to *A. shirleyi* communities described by Speck (1968) and Groves (1981) in Queensland.

Where extensive stands of *A. doratoxylon* remain, *Ps. waterhousei*, on the evidence of (presumed) emergence holes, would seem to be a common species. This is evidently the case at Monia Gap and at the Weddin Mountains, and probably on other residual escarpments in mid-western N.S.W. The existence of an apparently thriving population east of the Great Divide at Sandy Hollow is interesting, although perhaps not surprising in view of the strong "western" element in the flora and vegetation of the upper Hunter valley (Anderson, 1968). The Rock, at latitude 35.16S, remains the southernmost known locality of *Ps. waterhousei.* The northern slopes of the Cromer Hills near Holbrook are clothed in *A. doratoxylon*, but the absence of any sign of the beetle or of any emergence holes in numerous trees examined by me strongly suggests that the site is outside the range of *Ps. waterhousei.*

Acacia doratoxylon does not extend north beyond about 30°S latitude in northern N.S.W., where its range meets that of *A. leiocalyx* (Maslin & Pedley, 1982), the latter species being the only other confirmed host of *Ps. waterhousei* (see Table 1). Both A. Sundholm (pers. comm., 1985) and G. Williams (pers. comm., 1985), describing populations of *Ps. waterhousei* respectively near Kennebri (locality No. 6, above) and at Mt. Kaputar National Park (locality No. 8, above), tentatively identified the host as *A. leiocalyx*, and the transition to that host probably occurs in that area. *A. leiocalyx* in fact extends to the coast in northern N.S.W. and southern Queensland (Maslin & Pedley, 1982), although *Ps. waterhousei* appears confined to the western part of the host's range.

Hawkeswood (1983) expressed great concern about the continuing survival of *Ps. waterhousei.* However, the preference of its southern host *Acacia doratoxylon* for skeletal soils on rocky ridges and hillslopes (Costermans, 1981; Cunningham *et al.*, 1981) has ensured that extensive communities of the tree remain, even in places where the surrounding flat country was cleared for agriculture long ago. This fact, together with the known presence of the beetles in two national parks (Mt. Kaputar and Weddin Mountains) and two nature reserves (Round Hill and The Rock) should allay any fears for its survival in N.S.W. The 'lancewood' species of *Acacia* in Queensland occupy similar habitats, and *Ps. waterhousei* should be sought in such places.

TABLE 1
Recorded larval and adult host plants of *Pseudotaenia* species.

Sp. of *Pseudotaenia*	Recorded host	Family	Reference
ajax (Saund.)			
larva	brigalow (*Acacia harpophylla*)	Mimosaceae	Hobler (1925); Adams (1966)
adult	*Eucalyptus* sp., 'broad-leafed . . . a heavy gnarled tree'	Myrtaceae	Barnard (1890)
adult	blackbutt (= *Eucalyptus cambageana*: Perry, 1968)	Myrtaceae	Hobler (1925)
adult	coolibah (= *Eucalyptus microtheca*: Boland *at al.*, 1984)	Myrtaceae	Adams (1966)
adult	grey box (= *Eucalyptus moluccana*: Boland *et al.*, 1984)	Myrtaceae	Adams (1966)
quadrisignata (Saund.)			
adult	trees of 15-20cm diam. 'near the edge of the scrub'	?	Barnard (1890)
adult	red ash (= *Alphitonia excelsa*: Perry, 1968)	Rhamnaceae	Anonymous (undated)
adult	sarsaparilla (= *Alphitonia petriei*: Blake & Roff, 1972)	Rhamnaceae	Anonymous (undated)
salamandra (Thoms.)			
adult*	*Casuarina* sp.	Casuarinaceae	Barnard (1890)
spilota Cart.			
larva	*Acacia grasbyi*	Mimosaceae	Hawkeswood & Peterson (1982)
waterhousei (V. d. Poll)			
larva	*Acacia leiocalyx*	Mimosaceae	Hawkeswood (1983)
larva	*Acacia doratoxylon*	Mimosaceae	Pullen (1984)
adult (larva ?)†	lancewood (= *Acacia shirleyi*: Speck, 1968; Pedley, 1978)	Mimosaceae	Barnard (1890)

* as *Chalcophora vittata*
† as *Chalcophora superba* (= *Pseudotaenia superba*), a related species restricted a to W.A. (Carter, 1929)

Acknowledgements

Dr J. F. Lawrence of the CSIRO Division of Entomology in Canberra and Mr G. A. Holloway of the Australian Museum, Sydney, kindly allowed access to collections in their care. Messrs E. E. Adams of Edungalba, A. M. Sundholm of Sydney and G. A. Williams of Lansdowne gave information freely. My father Mr Roy Pullen helped and shared in the rediscovery of *Ps. waterhousei* at the Weddin Mountains in 1981.

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